

In the Claims:

1. (Currently Amended) A method for automatically publishing data in a final publication format, wherein the data is in the form of a newspaper having an original, existing format including a plurality of pages, each page having a predetermined layout comprising a plurality of independently standing data blocks, each block having an internal structure, the method comprising:

obtaining a scanned representation of said newspaper, said representation preserving said layout,

from said representation automatically analyzing the newspaper to decompose the predetermined layout of each page of the newspaper in the original, existing format into said plurality of blocks, each block representing an object; said analyzing furthermore applying prior knowledge of newspaper structure and identifying at least one logical relationship between said blocks:

converting each object to an internal publication format, said internal publication format identifying and preserving said internal structure of said blocks within said objects, said internal publication format furthermore preserving said layout as a relationship between said objects; said internal publication format furthermore preserving said logical relationship; and said internal publication format comprising a mark-up language to indicate said objects and features of said internal structure and

rendering said internal publication format to incorporate said objects, said layout and respective internal structures and said logical relationship in the final publication format.

2. (Canceled)

3. (Original) The method of claim 2, wherein said mark-up language is XML.

4. (Original) The method of claim 3, wherein the final publication format is a mark-up language document.

5-6. (Canceled)

7. (Original) The method of claim 1, wherein said layout is decomposed by classifying each object according to a category selected from the group consisting of an article, an advertisement, a picture not otherwise associated with said article or said advertisement, and general data.

8. (Previously Presented) The method of claim 1, wherein said object is constructed in said converting from content and at least one attribute of said object in said layout.

9. (Original) The method of claim 8, wherein said object is composed of a plurality of primitives, each primitive containing a portion of content and an attribute.

10. (Original) The method of claim 9, wherein each attribute is stored in an XML tag.

11. (Original) The method of claim 10, wherein at least one attribute describes a relationship between said primitives of said object.

12. (Previously Presented) The method of claim 1, wherein said rendering said internal publication format is performed according to a type of hardware device for displaying the final publication format.

13. (Previously Presented) The method of claim 12, wherein said rendering said internal publication format is performed only after a query from a specific hardware device is received.

14. (Previously Presented) The method of claim 1, wherein said analyzing the data to decompose said layout further comprises:

preparing a list of text and/or graphic elements for each object;
determining properties of each element; and
recognizing structural layout properties of the data in an original format.

15. (Previously Presented) The method of claim 14, wherein said determining properties of each element includes determining visibility and overlap characteristics for each graphic element.

16. (Previously Presented) The method of claim 14, wherein said determining properties of each element includes determining a special characteristic for each text element.

17. (Previously Presented) The method of claim 14, wherein the data is in a form of a newspaper, and said analyzing the data to decompose said layout further comprises:

determining each text segment for each object; and
building a text block from a plurality of aligned text segments.

18. (Previously Presented) The method of claim 17, wherein said analyzing the data to decompose said layout further comprises:

creating a graphic block from a plurality of graphic elements;
creating a hierarchy of graphic blocks; and
distributing text blocks in said hierarchy of graphic blocks.

19. (Currently Amended) A system for automatically publishing received data of a pre-existing newspaper, the newspaper in a computerized format, the system comprising:

(a) at least one source of newspaper data, said source preserving an original, structure of the newspaper, the computerized format comprising a plurality of pages, each page having a predetermined layout comprising a plurality of independently standing data blocks, each block having an internal structure;

(b) a mark-up language distiller module for converting the newspaper from said original format to a mark-up language format, wherein said mark-up language distiller module is configured to apply prior knowledge of newspaper structure and automatically analyzes the newspaper data in said original, existing digital format to (1) decompose the newspaper data into said plurality of blocks, each block with said internal structure representing an independent data object, each object having content and at least one attribute of the data, such that each object is converted to said mark-up language format, said markup language distiller module format further analyzing

and preserving said structure; and (2) identify at least one logical relationship between blocks, said markup language distiller module further analyzing and preserving said logical relationship; and

(c) a publisher server for converting the data from said mark-up language format to a final publication format, said final publication format incorporating, as objects, said blocks with said internal structure, and further defining interrelationships with said objects.

20. (Canceled)

21. (Original) The system of claim 19, wherein' said mark-up language format is XML.

22. (Original) The s ystem of claim 21, further comprising:

(d) a repository for storing said plurality of objects, wherein each object features data in said XML format and an image of the data.

23. (Currently Amended) A method for automatically publishing data of a preexisting document in a final publication format, wherein the data is received in an original, existing format comprising a plurality of pages, each page having a predetermined layout comprising a plurality of independently standing data blocks, each block having an internal structure the method comprising:

obtaining a representation of said preexisting document , said representation preserving said layout;

from said representation, automatically analyzing the preexisting document to decompose the data received in the original, existing format into a plurality of objects, each object corresponding to one of said blocks; said analyzing furthermore applying prior knowledge of document structure and identifying at least one logical relationship between said blocks;

preparing a list of text and/or graphic elements for each object;

determining properties of each element, including determining visibility and overlap characteristics for each graphic element within said object;

recognizing structural layout properties of the data in an original format;

converting each object to an internal publication format; said internal publication format furthermore preserving said logical relationship; and said internal publication format comprising a mark-up language to indicate said objects and features of said internal structure and

rendering said internal publication format in the final publication format, said final publication format presenting said blocks as said independently standing objects incorporating said internal structure and said layout and said logical relationship.

24. (Currently Amended) A method for automatically publishing received data in a final publication format, the data having an original, existing format comprising a plurality of pages, each page having a predetermined layout comprising a plurality of independently standing data blocks, the method comprising:

obtaining a representation of said received data having an original existing format, said representation preserving said layout;

from said representation, automatically analyzing the pages to decompose the pages of the data received in the original, existing format into a plurality of objects, said objects corresponding to said blocks; said analyzing furthermore applying prior knowledge of page structure and identifying at least one logical relationship between said blocks;

preparing a list of text and/or graphic elements for each object;

determining properties of each element, including determining a special characteristic for each text element;

recognizing structural layout properties of the data in an original format;

converting each object to an internal publication format; said internal publication format identifying and preserving said internal structure of said blocks within said objects, said internal publication format furthermore preserving said layout as a relationship between said objects; said internal publication format furthermore preserving said logical relationship; and said internal publication format comprising a mark-up language to indicate said objects and features of said internal structure and

rendering said internal publication format in the final publication format such as to include said recognized structure in said objects and said logical relationship and to include said layout.

25. (Currently Amended) A method for automatically publishing received data in a final publication format, wherein the data is in the form of a newspaper, the newspaper having an original, existing format comprising a plurality of pages, each page having a predetermined layout comprising a plurality of independently standing data blocks, each block having structural layout properties, the method comprising:
obtaining a representation of said newspaper, said representation preserving said layout;

from said representation, automatically analyzing the newspaper to decompose the data received in the original, existing format into a plurality of objects, said objects corresponding to said independently standing blocks; and

said analyzing furthermore applying prior knowledge of newspaper structure and identifying at least one logical relationship between said blocks;

preparing a list of text and/or graphic elements for each object;

determining properties of each element;

recognizing said structural layout properties of the data in an original format;

determining each text segment for each object;

building a text block from a plurality of aligned text segments;

converting each object to an internal publication format; said internal publication format furthermore preserving said logical relationship; and said internal publication format comprising a mark-up language to indicate said objects and features of said internal structure and

rendering said internal publication format in the final publication format to comprise said blocks as objects incorporating said structural layout properties, and to include said layout and said logical relationship.

26. (Previously Presented) The method of claim 1 wherein said form of a newspaper comprises at least one property, said property selected from a group including multiple columns, titles, subtitles, images and image captions.

27. (Previously Presented) The method of claim 1, wherein said blocks correspond to content items in said newspaper.

28. (Previously Presented) The method of claim 27, wherein said blocks comprise a part of a column or article in said newspaper.

29. (Previously Presented) The method of claim 28, wherein said block includes a text portion, such that it is related to the physical layout of said newspaper.

30. (Previously Presented) The method of claim 1, wherein said blocks rendered in said final publication format may be viewed in an order defined by the user.

31. (Previously Presented) The method of claim 1 wherein said data comprises new data and archived data.

32. (Previously Presented) The method of claim 31, wherein said archived data comprises microfilm data.

33. (Previously Presented) The method of claim 32, wherein said analyzing said data further comprises converting said microfilm data into a digital format.

34. (Previously Presented) The method of claim 1, further comprising presenting said final publication format to a user through a Graphic User Interface (GUI).

35. (Previously Presented) The system of claim 19, wherein said at least one source of data comprises a source of new data.

36. (Previously Presented) The system of claim 19, wherein said at least one source of data comprises a source of archived data.

37. (Previously Presented) The system of claim 36, wherein said source of archived data contains microfilm data.

38. (Previously Presented) The system of claim 37, further comprising a microfilm publisher for converting said microfilm data into said digital format.